

ARGO - ANLEG GMBH Synergetics meeting Vienna

Unveiling the Potential of Hydrogen for Inland Shipping



WIR GEBEN GAS

Production from valve to complete of H2 Tanksystem, to complete H2 Systems

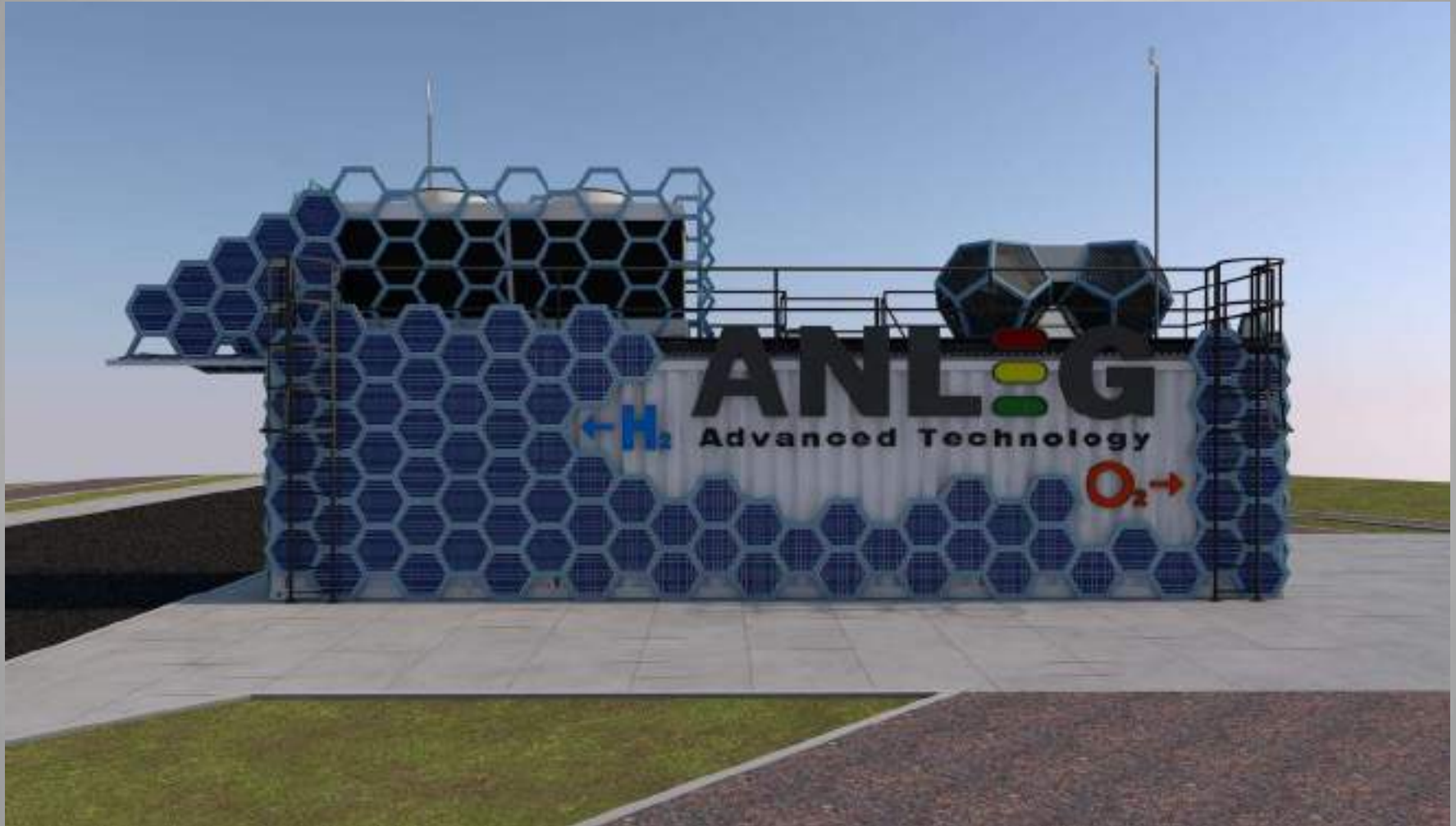


Refueling Stations: 200 to 3000 kg/day



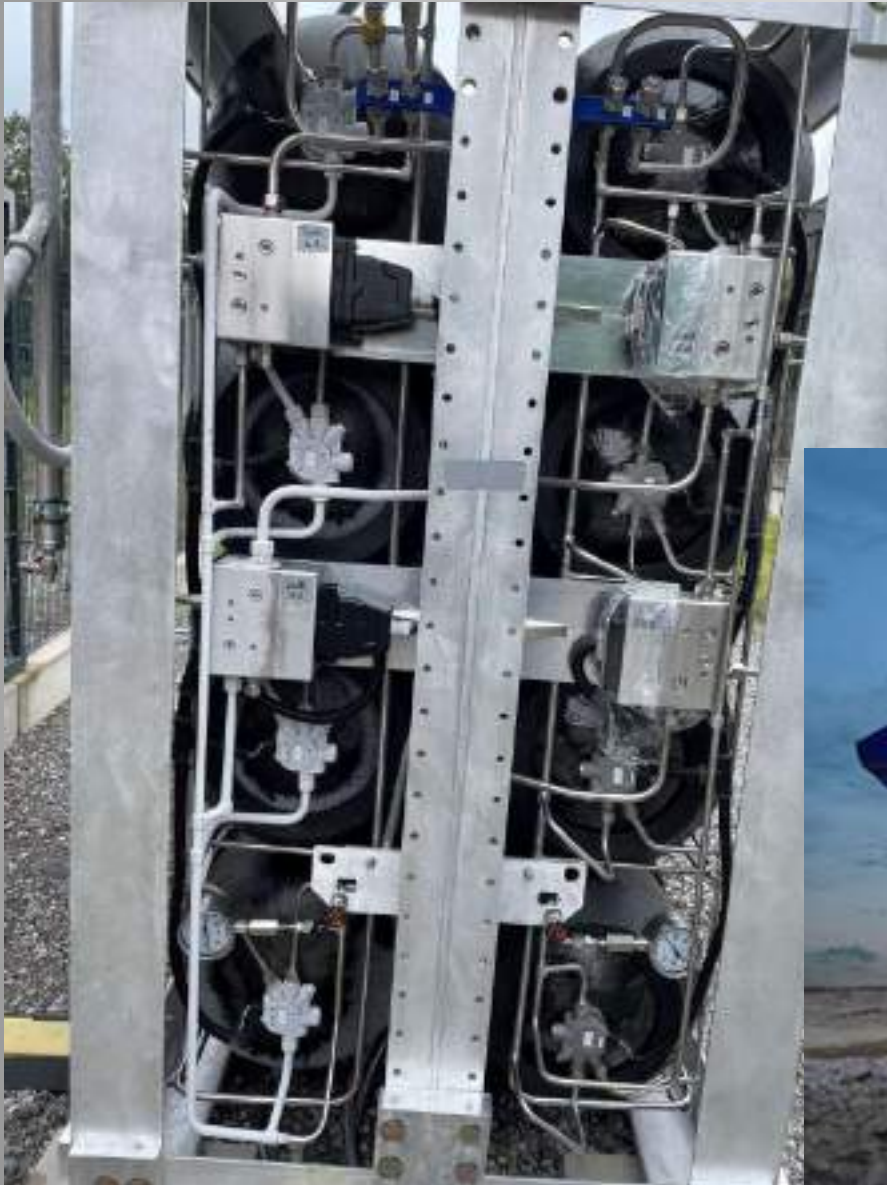
Anleg's H2 Solutionsc 6 bis 500 kW

H2 Production ofh2 at The harbor inclduing refueling.



Heavy Duty Application: MINE TRUCK

**1.2 MW Fuel cell
H2 Tank-System**



Heavy Duty Application: TRUCKS



Volvo 60 T



Volvo 40 T



MAN 40 T ICE & Fuel Cell



FCELL - Crafter Fcell



16 T/18T Mercedes-Paul Truck

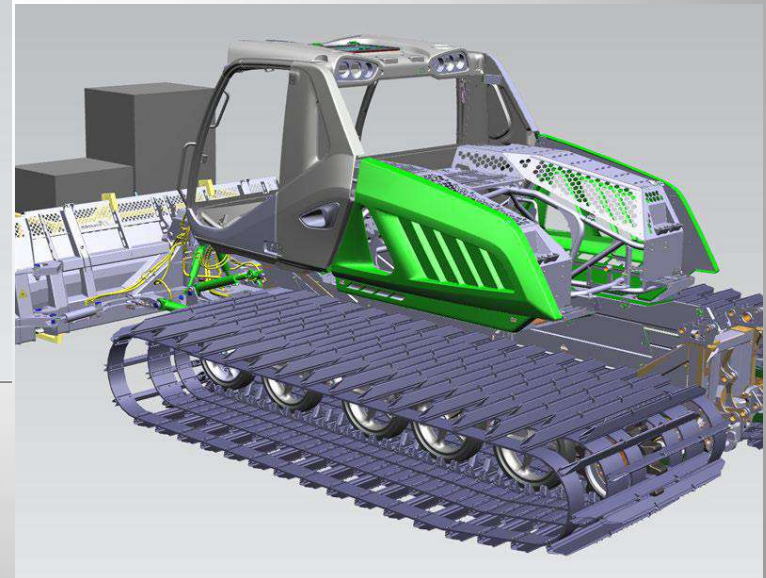
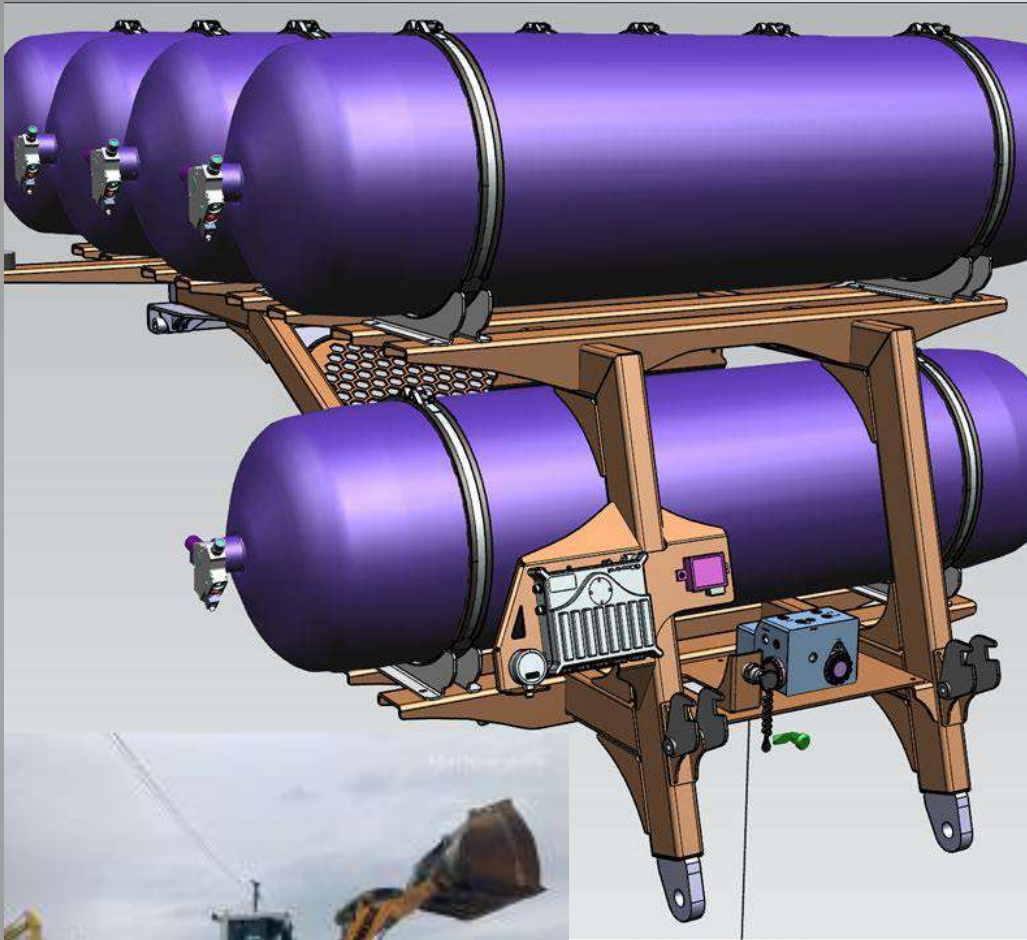
Heavy Duty Vehicles: SNOW GROOMER

Integration of a tank-system and fuel cell and or combustion engine into a special heavy duty vehicle

5 x 244 L 700 bar

1 x GHU

5 x orientable TPRD 1 x Controller



Mobile H2 Infrastructure Solutions:

Refueling of several H2 user with one refuelling station!
Not the customer is coming to the refuelling station but the refuelling station to the customer



Mobile Refuelling Station's



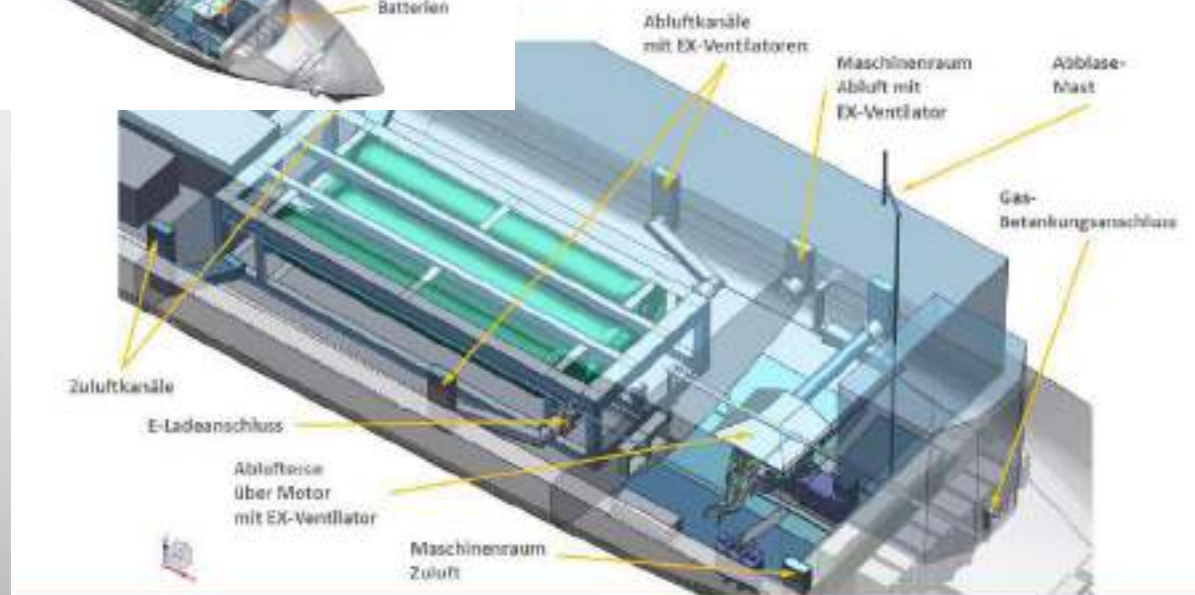
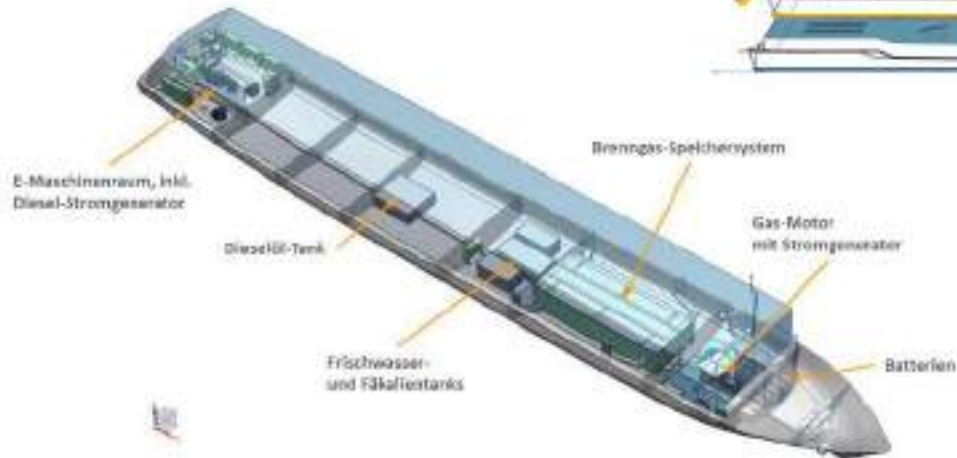
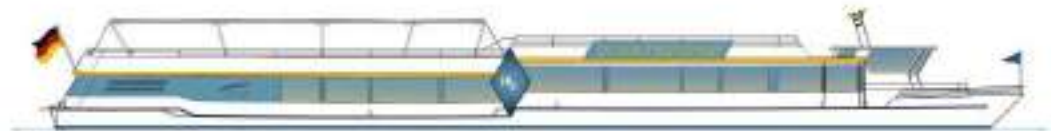
Donauprinzessein

Donauprinzessen Luxwerft



Die Donauprinzessin

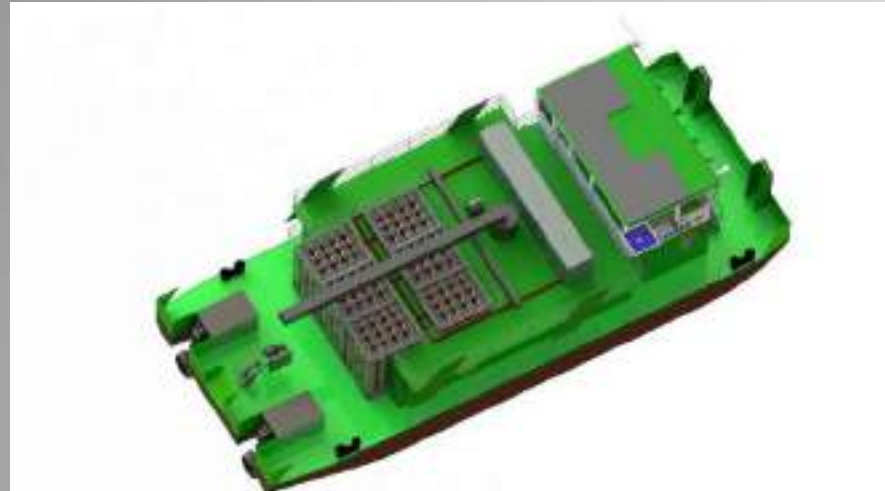
 3D-Ansicht



Project small üush boats



Project Elektra: H2-Pushboat

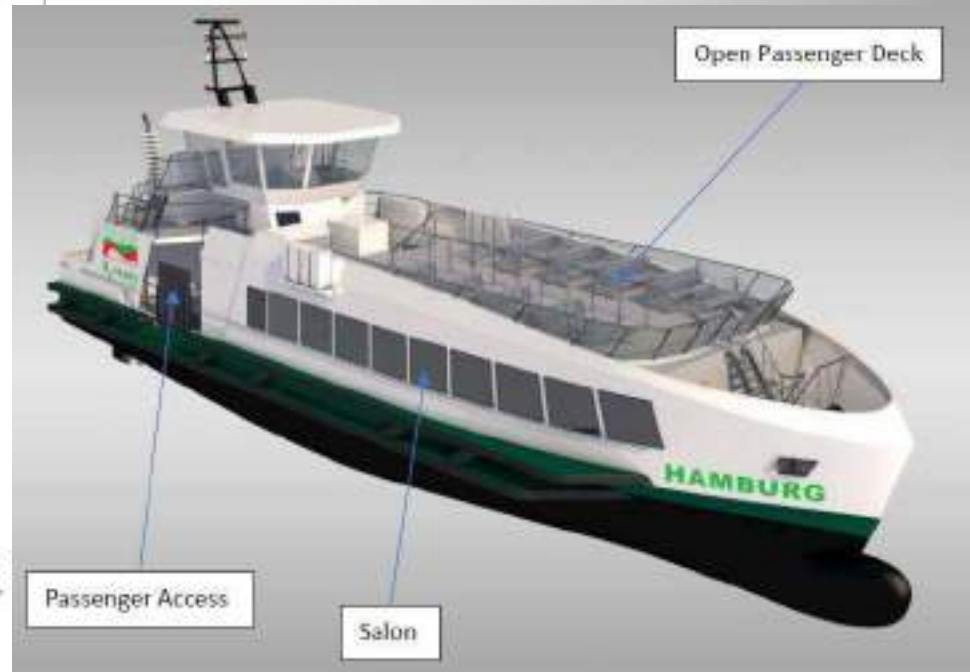
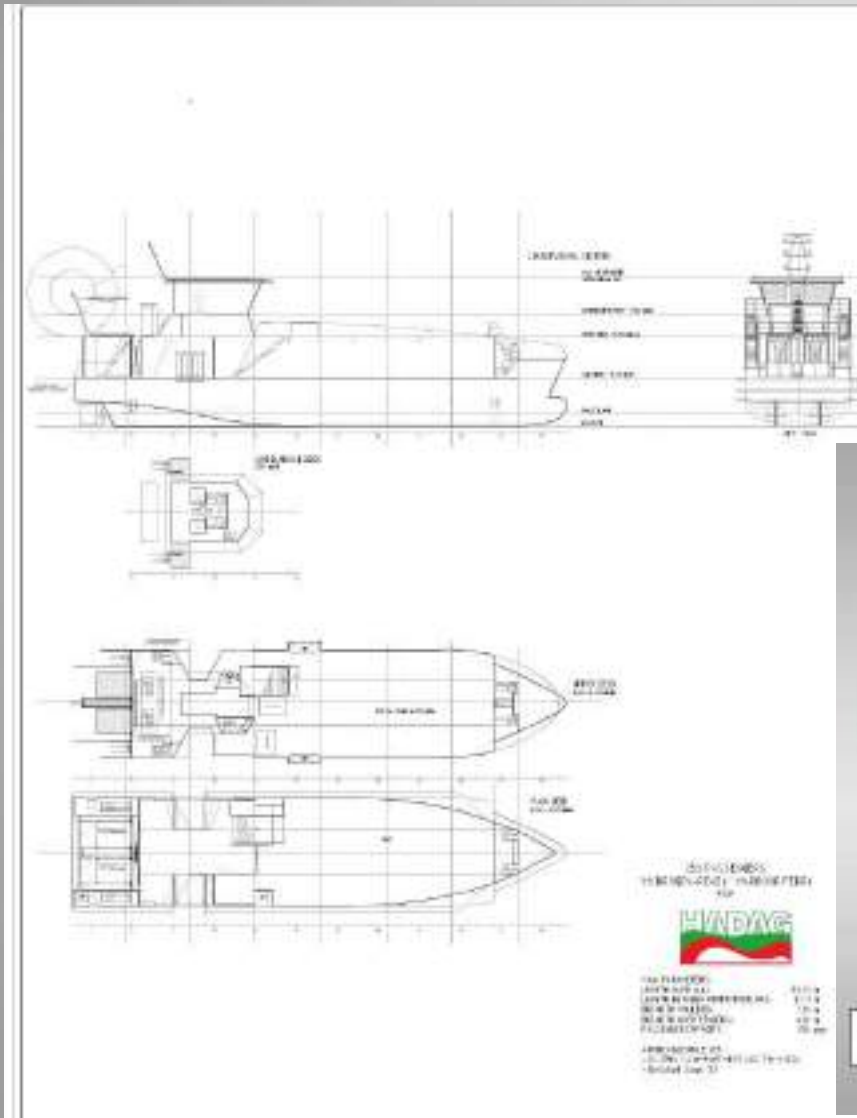


Elektra MEGC H2 Tank System
Modular: 700 kg on bord (6 x 125 kg)
Module: 125 kg H2 PN 500
Modules cratable and changeable
One refuelling station can supply different harbors



Project Hamburg

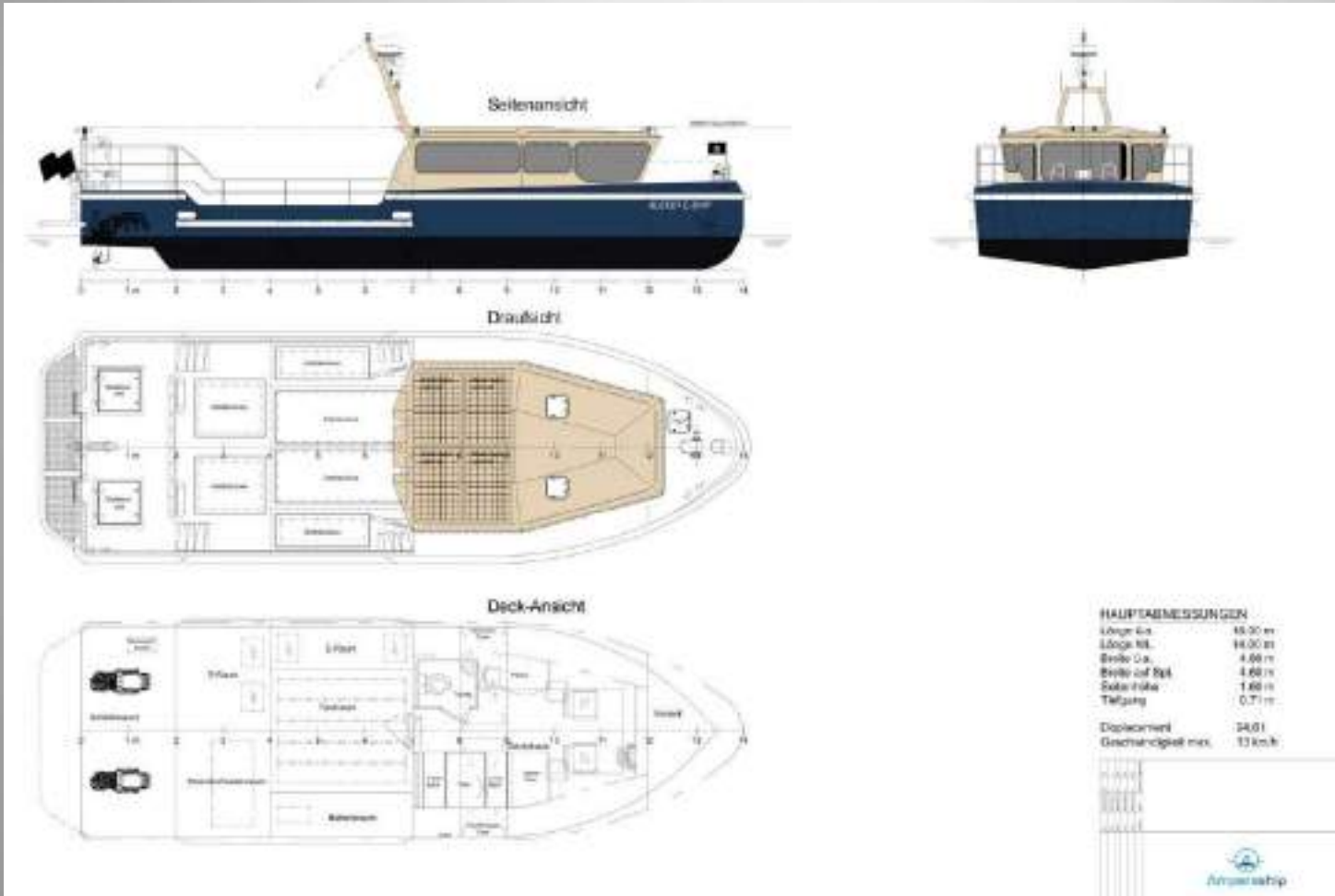
2 x 100 KW Fuel CELL and 2 x
2 x 125 kg H2 PN 500 H2 Tank-Tanker
cratable and changable
One refueling station can supply different
applications, harbors



Project Working Ship

Working ship for Offshore Plattformen
Pilot Boat
Harbor Ship, Police, Tax-offices, etc..

Tank System
Module:
Gas Handlin
Unit
H2 Supply and
Rechargeing
Pipeleine
Certification
supplort
DNVGL and
CESNI



Energy Autonomous Houseboat with 10 Kw A-A-Fuel Cell

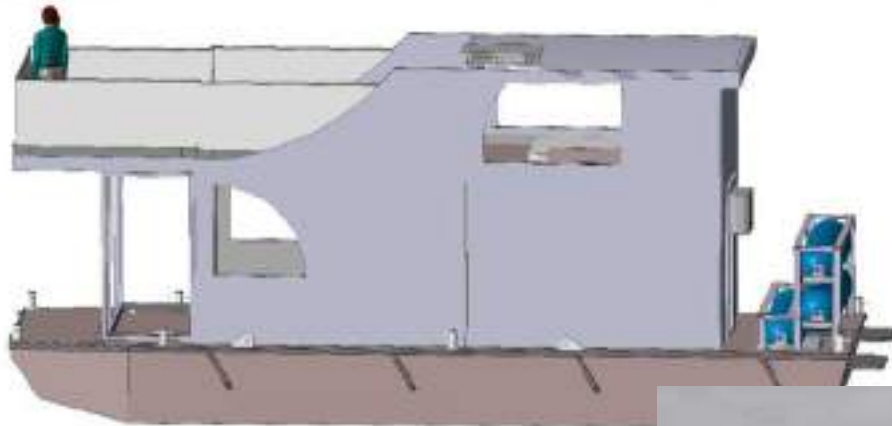
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B-22-09-07 - Eichberger Reisen - Hausboot



Rahmenaufbau Tanksystem
530 Liter / 500 bar Tank

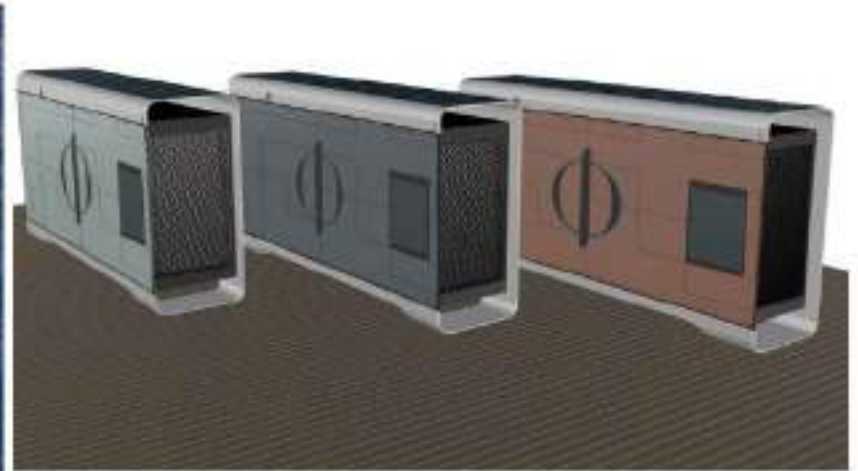
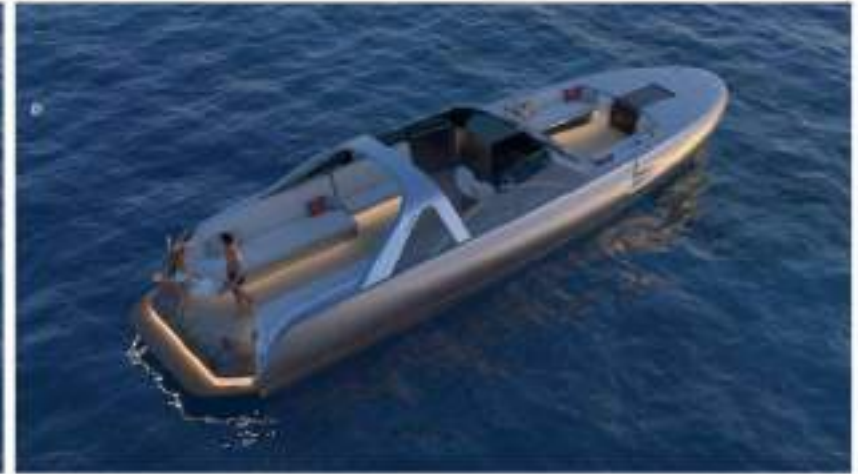


pro Behälter: 530 L; 500 bar
Gewicht: 1x Tank = ca. 280 kg
1x H2/Tank = 16,5 kg
1x Rahmen = ca. 90 kg
Rohrleitung ca. 6 kg

Gewicht Tanksystem gesamt: ca. 1000 kg

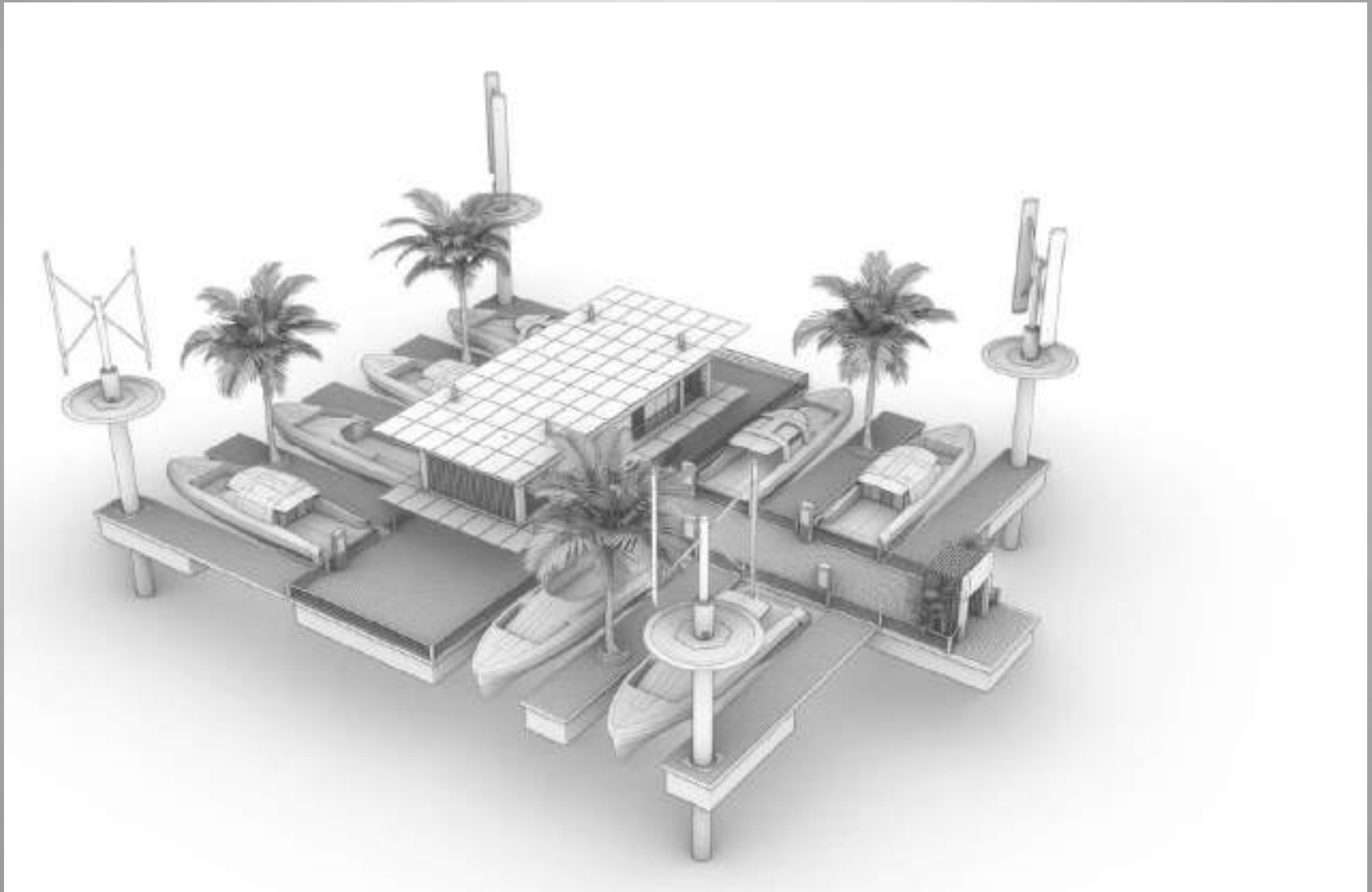


EPHYRA



Ephyra emissions free shipping Solutions

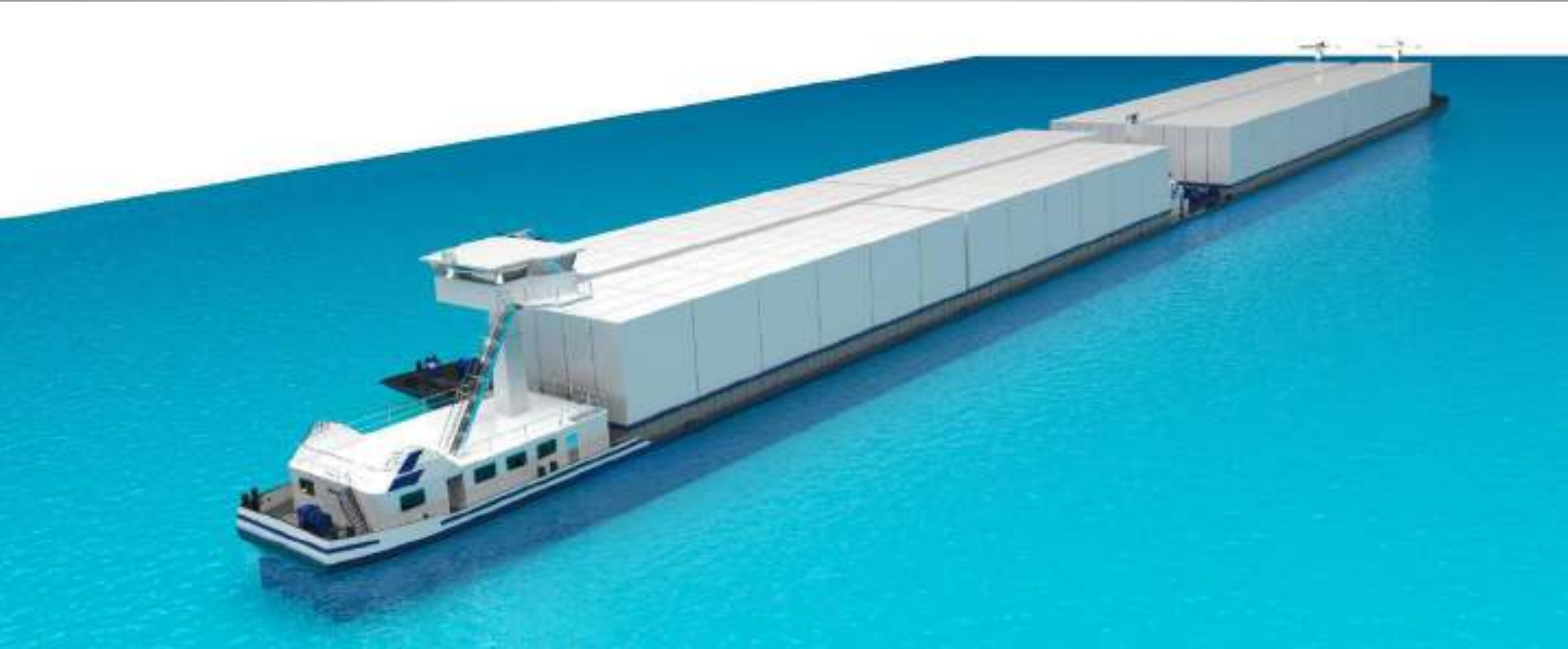
42/48" - Luxuray Motoryacht Eco-System including Emission free H2-Infrastructure



Emissions free ships Anleg is Partner

Alva Eco Yacht 90 feet catamaran 100% emission free





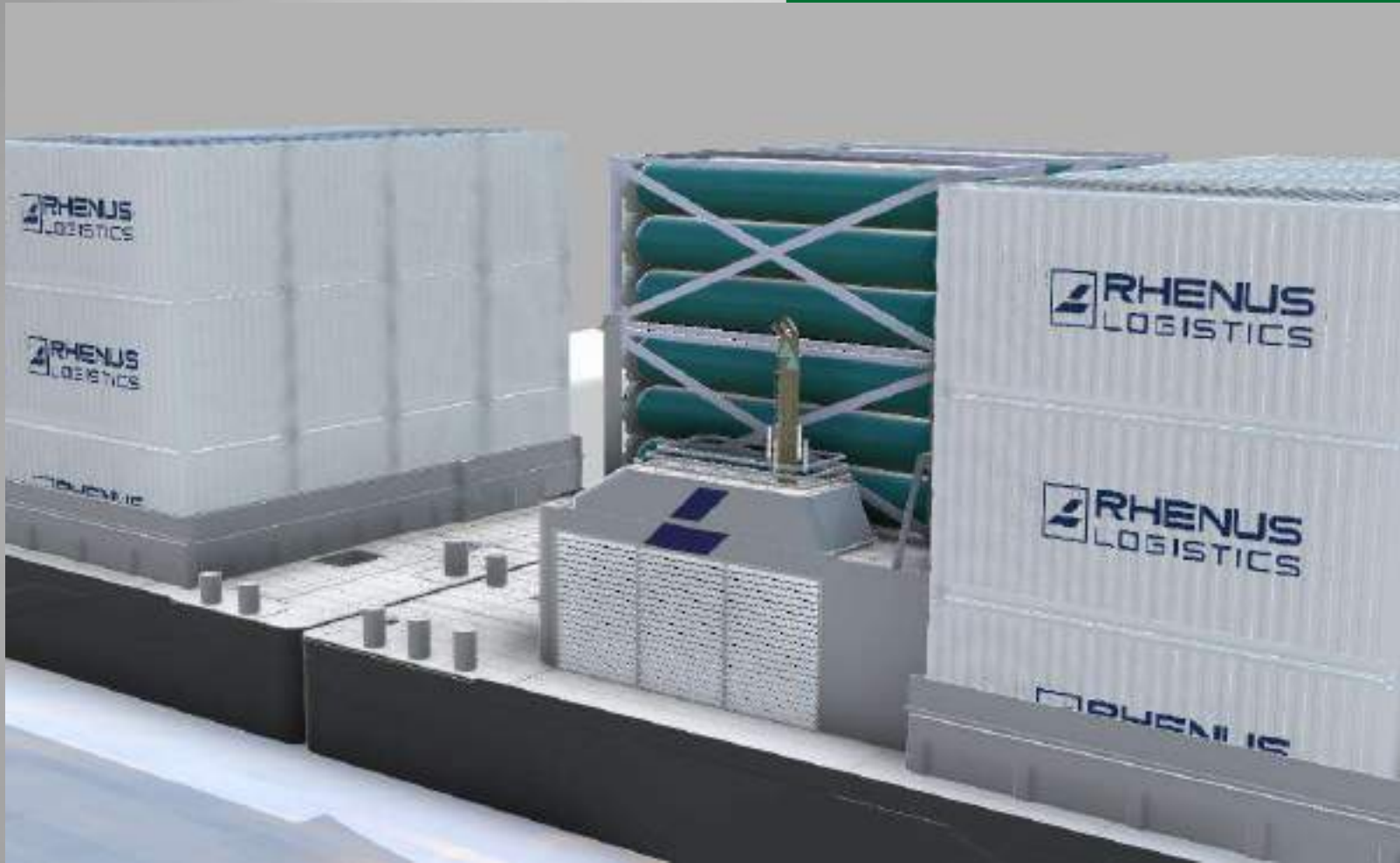
New Emission Reduced Push Boat Solution:

Multi Energy supply systems, with 400 KW, 800 KW, 1,2 MW Fuel Cell Power

Special Fuel Cell System designed for 24 h/365 day use)

H2 – Cartridge: 20“-Feet Size, with 500 bar, 500 kg

Emission-Reduced Pushboats

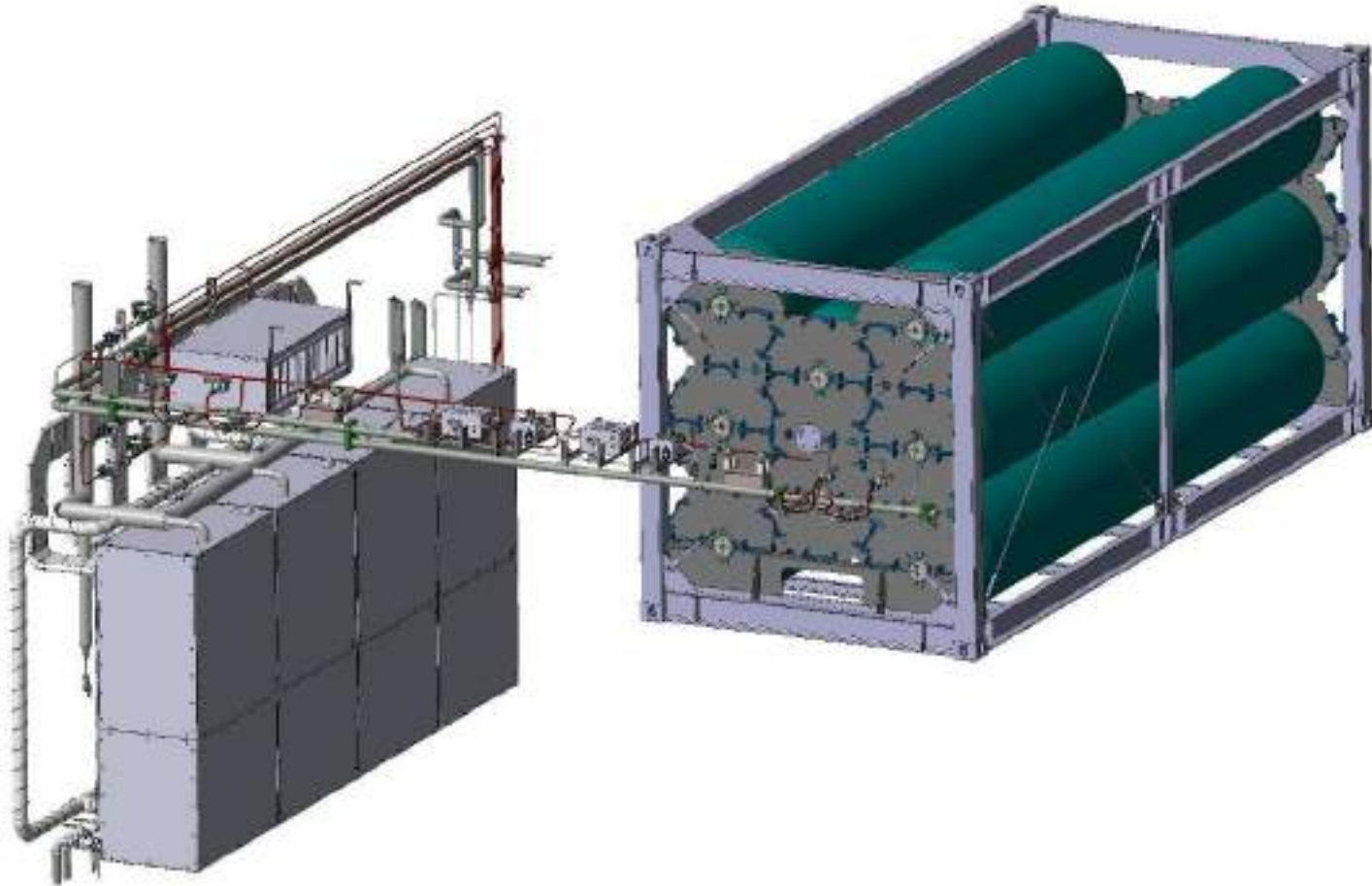


Integration and Certification of the entire H2 System
H2 Supply by 500 bar H2Tank-Tainer, integration of FuelCell up to 1.2 MW

Complete Integration from one supplier of the entire H2 Power Train

Confidential

800 KW installation



Integration of Fuel Cells and H2 in Ships



Integration of Fuel Cells up to 1.2 MW into Ships

Integration of the complete H2 Supply Chain including Class approval

Energy – Management of the H2 Energy Power Train

Heat Management

Support for Classification Approval

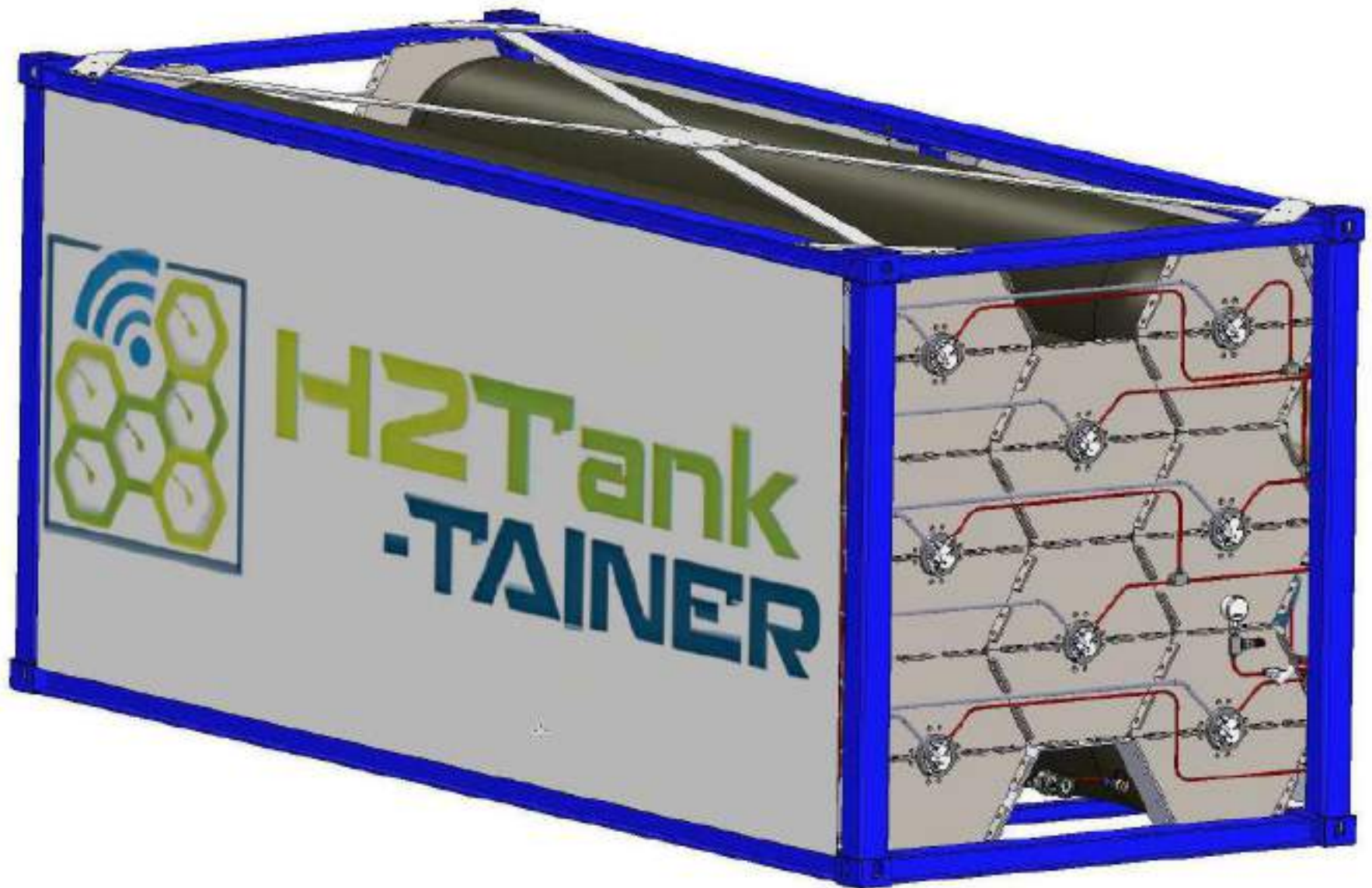
H2 Power Supply everything out of one Hand

20 x Feet Container for H₂, MEGC-TPED Zertified, Lloyd Approved

500 bar, > 500 kG of H₂

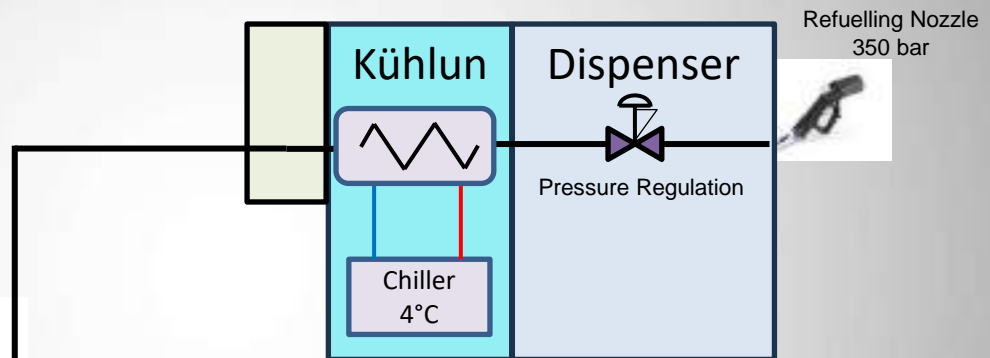
Can be used for H₂ supply on ships and as low cost refuelling station and as H₂ supply for refuelling stations





TankTainer 350 bar HRS

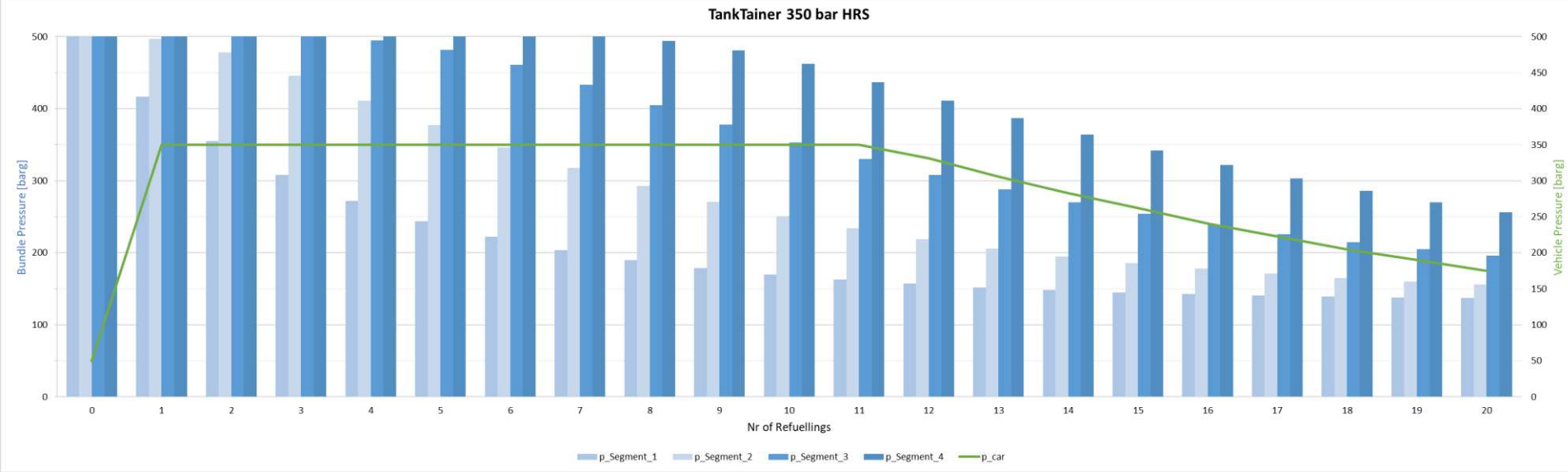
20" ISO MEGC 500 kg
@ 500 bar
4 x 125kg Segments



Druckverlauf pro Betankung

- 10 volle Betankungen auf 350 bar mit 1 TankTainer a 4 Segmente (konservative Annahme)

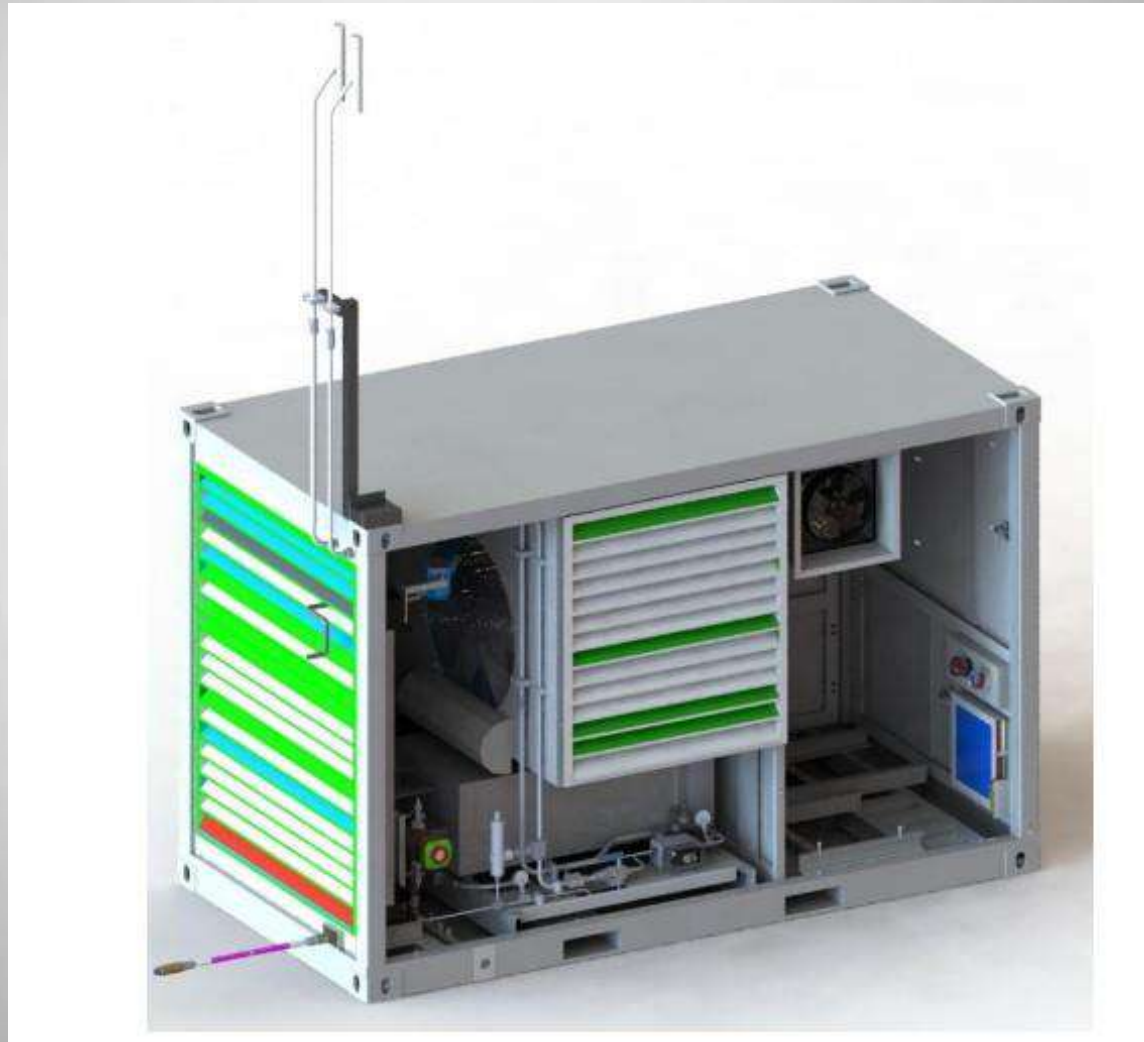
T [K]	288,15
Vehicle Data	
p_car_max [bar]	350
p_car_min [bar]	50
V_Tank [l]	
m_Tank [kg]	20
V_Tank_math [l]	838
n_Refueling	30
Nr. of Segments	4
delta_p [bar]	80



Electrical 70 KW Fuel Cell - Generator

LANDSTROM –GENERATOR

Power: 70 kW to 1.2 MW // Outlet Power: 400 V 50 Hz or other



Fuel Cells from 0,5 KW to 1.2MW

5 KW Power Supply
40 KW Power supply for small server
70 KW – 200 KW for recharging of E-Ships
200 KW – 1.2 MW



Thank you

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